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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,572	08/30/2001	Brian Scott Messenger	MESS0001	2503
22862	7590	11/01/2005	EXAMINER	
GLENN PATENT GROUP 3475 EDISON WAY, SUITE L MENLO PARK, CA 94025			TSEGAYE, SABA	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/944,572

Applicant(s)

MESSENGER, BRIAN SCOTT

Examiner

Saba Tsegaye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 31-89 is/are rejected.
- 7) ☒ Claim(s) 25-30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-17, 23 and 34-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the phrase "network comprising a memory, an apparatus...comprising a module" is confusing. It is not clear where the module is located.

Claim 1, line 7, the phrase "said at least one shift register" lacks antecedence basis.

Claim 5, line 1, the phrase "said predictive nature of said randomization" lacks antecedence basis.

Claim 10, line 2, the phrase "said randomization" lacks antecedence basis.

Claim 11, line 1, the phrases "said high speed predictive nature and said system permits" lack antecedence basis. Further, the phrase "high speed predictive nature" is vague. It is not clear what is referred by "predictive nature".

Claim 23, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

Claim 34, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

***Claim Objections***

3. Claim 54 is objected to because of the following informalities: claim 54 is numbered twice. Appropriate correction is required.
4. Claims 46-89 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 1-45. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 18- 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Li et al. (“on the design and analysis of unmatched LFSR pattern generators in pseudorandom testing” IEEE 1993 pages 217-222).

Regarding claims 18 and 22, Li discloses unmatched LFSR pattern generators in pseudorandom testing. As shown in figs. 3 and 4, the number of LFSR stages  $m$  is less than the number of circuit inputs  $n$  with a dynamic connection scheme (means for handling a limited number of cases where two or more input data patterns are mapped to a same output value).

Regarding claims 19-21, Li discloses means for permitting a set value of multiple output cases where any of two, three, or four input data patterns map to a same output pattern (unmatched LFSR pattern generators (output  $m < \text{input } n$  see fig. 3b). Further, Li discloses that a mapping network between the LFSR outputs and circuit inputs to dynamically change the connection rather than connecting them directly in a static mode. For circuit with  $n$  inputs, instead of requiring at least  $n$  flip-flop, the design only needs  $m + \lceil n/m \rceil$  flip-flop elements and the connection mapping network, where  $m$  flip-flops are used to construct a primary LFSR for pattern generation while the others form a control LFSR to dynamically change the connections between the LFSR outputs and circuit inputs by means of dynamically changing the mapping network (pages 218-220).

7. Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Dhara (US 5,974,104).

Regarding claim 23, Dhara discloses, in Fig. 1, a method for ultra-high speed data classification, comprising the steps of: providing a data framer for framing input data (12); providing a complex circuit (10) for permitting a user to differentiate between a plurality of different patterns in the input (18); performing serial mode classification of the data to produce

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extremely fast characterization in a predictable timeframe by performing adaptive programmable randomization to differentiate between input vectors (column 2, line 36-column 3, line 29).

8. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Ryan (US 4,530,095).

Regarding claim 24, Ryan discloses, in Fig.1, a block diagram for providing a parity calculation typically from data in the form of a high-speed bit stream presented at terminal 11. A bit pattern or template is compared (comparator 17) to the content of the bit stream to detect matches between the two (see column 2, lines 19-60).

9. Claims 24 and 31-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Bergstrom et al. (US 5,907,614).

Regarding claims 24, 33 and 34, Bergstrom discloses, in Figs. 3-5, an apparatus for ultra-high speed data classification, comprising: a data framer (38; an ASIC 66 provides framer circuitry); the data framer comprising an adaptive programmable randomizer (the framer circuitry in the preferred ASCII scans the incoming data in order to find the predetermined framing pattern); and a complex circuit for controlling the adaptive programmable randomizer (ASIC 66) (column 6, lines 7-21; column 7, lines 4-24).

Regarding claim 31, Bergstrom discloses the apparatus wherein the complex circuit (ASIC 66) maintains multiple input pattern mappings associated with different primary and secondary randomizer equations, determines a best randomizer selection decides when to switch

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randomizer values and determines when a randomizer value is no longer useful and an entirely new mapping should be generated (column 7, lines 25-45).

Regarding claim 32, Bergstrom discloses the apparatus wherein the complex circuit comprises any of the following: a microprocessor interface for communicating to a host processor system (42; 68).

Regarding claim 35, Bergstrom discloses the method wherein input patterns are handled by an input manager control and state machine function where they are directed into and input register (column 4, lines 46-63).

Regarding claim 36, Bergstrom discloses the method wherein the input patterns are loaded into an external memory for use in cases where a mapping is discarded and a new mapping must be generated (column 4, lines 64-67).

10. Claim 33 is rejected under 35 U.S.C. 102(e) as being anticipated by Hegge et al. (US 2001/0055274).

Hegge discloses a method for ultra-high speed data classification, comprising the steps of: providing a data framer for framing input data (dedicated “silicon” or gates at the chip level are employed to extract rapidly information from the data link header); and providing a complex circuit (a combination of hardware and software) for permitting a user to differentiate between a plurality of different patterns in the input data (0016).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 5-11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (US 5,546,503) in view of Li et al. ("on the design and analysis of unmatched LFSR pattern generators in pseudorandom testing" IEEE 1993 pages 217-222).

Regarding claims 1, 10, 11 and 23, Abe discloses a pattern recognition apparatus using neural network. Fig. 3 shows that a pattern classification apparatus 107 retrieves a learnt pattern from the memory 104, which pattern corresponds to the internal state, i.e., a pattern represented by a sum of inputs to the hidden neurons, of the network upon reception of an input data set. A class corresponding to the retrieved pattern is used as a classification result. Abe, however, does not disclose at least one programmable feedback shift register.

Li teaches that linear feedback shift registers are the most commonly used circuit structures for pseudorandom pattern generation (see introduction and figs. 1 and 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use programmable feedback shift register in the pattern classification apparatus of Abe, such as that suggested by Li. The motivation is being efficient for randomizing data stream and recognizing a pattern at a high speed.



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Regarding claims 5-9, Abe discloses that the neural network calculating apparatus calculates an output signal for an input signal in accordance with a multi-layered neural network configuration. A combination of inputs and desired outputs is stored in the storage apparatus.

*Allowable Subject Matter*

13. Claims 25-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reed et al. (US 6,714,144) discloses data randomization in a data storage system.

McDermott, III et al. (US 2005/0083921) discloses router switch fabric protection using forward error correction.

Abel et al. (US 6,768,716 B1) discloses a load balancing system, apparatus and method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

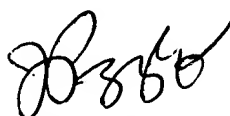
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST

October 30 2005

  
**JOHN PEZZLO**  
**PRIMARY EXAMINER**